REMARKS

The applicant initially wishes to thank Examiner Juntima and SPE Nguyen for the courtesy extended in the personal interview on February 4, 2004. A brief summary of the interview is provided below. The applicant also notes, with appreciation, the indication that claims 1-4, 20, 32 and 41 have been allowed and claim 16 has also been allowed, pending a minor objection discussed below.

During the interview, the applicant's attorney pointed out that none of the references, either singly or in combination, discloses or suggests dynamically changing allocation of a data channel to a control channel depending on an amount of bandwidth requests pending at any given time, as recited in claim 5. The Examiner indicated that clarification as to the terms data channel and control channel may overcome the rejection (Sce Interview Summary).

The applicant's attorney also pointed out that none of the references, either singly or in combination, discloses or suggests the claimed third and fourth queues recited in claim 11. The Examiner indicated that these features would be reviewed more closely in response to any subsequent communication from the applicant.

Claims 5, 6, 8, 10, 11, 13, 16-18, 23, 27-30, 36-39, 44 and 47 have been amended to improve form. Claims 1-11 and 13-50 remain pending in this application.

Claim 16 has been objected to for a minor informality. Claim 16 has been amended to improve form in accordance with the Examiner's suggestion. Accordingly, withdrawal of the objection is respectfully requested.

Claims 18, 27, 28, 36 and 37 have been rejected under 35 U.S.C. § 112, second paragraph as being indefinite. In particular, a number of phrases in these claims were considered to lack proper antecedent basis. Claims 18, 27, 28, 36 and 37 have hereby been amended to remove these phrases. Accordingly, withdrawal of the rejection is respectfully requested.

Claims 5-8 and 10 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Montpetit (U.S. Patent No. 6,366,761) in view of Sasuta (U.S. Patent No. 5,235,598). The rejection is respectfully traversed.

Claim 5 recites a bandwidth on demand apparatus in a communication system that includes a processor, a receiver and a transmitter that transmits commands to the terminals. Claim 5, as amended, recites that the processor allocates each of the channels as one of an unreserved contention channel or a reserved data channel, where the unreserved contention channels allow the terminals to transmit the bandwidth requests and the reserved data channels allow the terminals to transmit the terminal traffic. Claim 5, as amended, also recites that the processor dynamically changes the allocation of at least one channel from a reserved data channel to an unreserved contention channel depending on an amount of bandwidth requests pending at any given time.

The Office Action states that Montpetit discloses that the bandwidth allocation processor (BAP) allocates each of the channels as either a contention channel or a data channel and points to col. 10, lines 1-5 for support (Office Action – pages 3-4). The Office Action admits that Montpetit does not disclose dynamically changing the allocation of at least one channel from a data channel to a contention channel based on an amount of bandwidth requests pending at any given time (Office Action – page 4).

The Office Action, however, states that Sasuta discloses this feature and points to col. 1, lines 20-44, col. 2, lines 21-26 and col. 2, line 65 to col. 3, line 40 for support (Office Action – page 4). The applicant respectfully disagrees.

Sasuta discloses a communication system that allows a control channel to be used for both control data and voice transmissions (Sasuta – Abstract). More particularly, Sasuta at col. 1, lines 20-44 discloses that in conventional systems, one channel may be selected as a control channel while the remaining communication resources act as voice channels. The control channel transmits outbound signaling words (OSWs) from the communication resource allocator to the communication units. The control channel also transmits inbound signaling words (ISWs) from the communication units to the communication resource allocator. This portion of Sasuta does not disclose or suggest dynamically changing allocation of at least one channel from a reserved data channel to an unreserved contention channel, as recited in claim 5.

Sasuta at col. 2, lines 20-26 discloses that a voice/control channel may receive voice data and at least a limited set of control data. This portion of Sasuta also does not disclose or suggest dynamically changing allocation of at least one channel from a reserved data channel to an unreserved contention channel, as recited in claim 5. That is, using a single channel to transmit voice and control data is not equivalent to using one channel as a reserved data channel and another channel as an unreserved contention channel, much less dynamically changing the allocation of at least one channel from a reserved data channel to an unreserved contention channel depending on an amount of bandwidth requests pending, as required by claim 5.

Sasuta at col. 2, line 65 to col. 3, line 40 discloses that due to the limited number of communication resources, a control channel may be temporarily used as a voice channel. This portion of Sasuta also discloses that the communication resource allocator selects one of the communication resources to function as a voice/control channel when the system becomes very busy. The communication also determines if a communication resource can accommodate both voice and control data (col. 3, lines 19-30).

This portion of Sasuta also does not disclose or suggest dynamically changing allocation of at least one channel from a reserved data channel to an unreserved contention channel, as recited in claim 5. In other words, enabling a control channel to be used for both data and voice transmission is not equivalent to and does not suggest changing an allocation of a channel from a reserved data channel to an unreserved contention channel. In contrast, the voice/control data channel in Sasuta is still a reserved channel and is not equivalent to an unreserved contention channel. Therefore, Sasuta does not disclose dynamically changing allocation of at least one channel from a reserved data channel to an unreserved contention channel, as recited in claim 5, much less dynamically changing the allocation depending on an amount of bandwidth requests pending at any given time, as also recited in claim 5.

Therefore, the combination of Montpetit and Sasuta does not disclose or suggest each of the features of claim 5. Accordingly, withdrawal of the rejection and allowance of claim 5 are respectfully requested.

Claims 6-8 and 10 depend on claim 5 and are believed to be allowable for at least the reasons claim 5 is allowable. Accordingly, withdrawal of the rejection and allowance of claims 6-8 and 10 are respectfully requested.

Claim 9 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Montpetit in view of Sasuta and further in view of Mann et al. (U.S. Patent No. 5,167,035; hereinafter Mann). The rejection is respectfully traversed.

Claim 9 is dependent on claim 5 and is believed to be allowable for at least the reasons claim 5 is allowable. Mann does not make up for the deficiencies in the combination of Montpetit and Sasuta discussed above with respect to claim 5. Accordingly, withdrawal of the rejection and allowance of claim 9 are respectfully requested.

Claims 11 and 13-15 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Montpetit. The rejection is respectfully traversed.

Claim 11 recites a processing device for providing channel allocations that includes a first queue and a second queue, where the processing device stores high priority rate requests in the first queue and low priority rate requests in the second queue. Claim 11 also recites that the processing device includes a third queue and a fourth queue, where the processing device stores high priority volume requests in the third queue and low priority volume requests in the fourth queue. Claim 11, as amended, also recites that the high priority volume requests and the low priority volume requests are preempted for at least one frame by allocation of timeslots to the rate requests stored in the first queue and the rate requests stored in the second queue.

The Office Action states that Montpetit discloses that a first, second, third and fourth queue are provided in onboard computer (OBC) 69 according to four priority levels P1-P4 and points to col. 6, lines 3-41, col. 13 lines 28-41 and Fig. 10 for support. The Office Action also states that rate-based bandwidth allocation has higher priority than volume based allocation and points to col. 9, lines 10-27 for support (Office Action – page 7). The Office Action also states that volume based allocations have high or low priority levels. The Office Action further states that Montpetit inherently provides a first queue for storing high priority rate-based requests, a second queue for storing low priority rate-based requests, a third queue for storing high volume-

based requests and a fourth queue for storing low volume-based requests to enable it to efficiently process the requests (Office Action – pages 7-8). The applicant respectfully disagrees.

Montpetit may disclose that four levels of priority status associated with packets are defined as P1-P4, with P1 packets having the highest priority (Montpetit – col. 6, lines 3-40). Montpetit may also disclose that multiple OBC queues may be provided, such as a case where a different queue is provided for each of the onboard processors, such as the downlink allocation processor (DAP) 81, a service application processor (SAP) 83 and a bandwidth allocation processor (BAP) 85. Montpetit also discloses that multiple OBC queues may be provided based on priorities of the data packets (col. 13, lines 28-41).

The fact that Montpetit discloses that packets may have one of four priorities (P1-P4) and that multiple queues may be provided based on priorities of data packets, however, does not read on or suggest having a first queue storing high priority rate requests, a second queue storing low priority rate requests, a third queue storing high priority volume requests and a fourth queue storing low priority volume requests, as recited in claim 11.

The Office Action further indicates that the claimed four queues are "inherently provided in multiple OBC queues 69 to enable it to efficiently process the requests according to the assigned priorities" (Office Action – page 8). The applicant strongly disagrees.

To establish inherency, the Examiner must show that the claimed feature is necessarily included in the reference (See MPEP 2112). In this case, Montpetit merely discloses that four priorities of packets are provided and bandwidth allocation requests may be stored in queues based on their priorities. Such a disclosure, however, does not mean that Montpetit necessarily includes the claimed first, second, third and fourth queues which store high and low priority rate requests and high and low priority volume requests, respectively. Further, the mere fact that Montpetit discloses that P3 and P4 packets have lower priority than P1 and P2 packets does not read on or suggest the claimed third and fourth queues store high and low priority volume requests, respectively.

Claim 11, as amended, also recites that both high priority volume requests and low priority volume requests stored in the third and fourth queues are preempted for at least one frame by allocation of timeslots to rate requests stored in the first queue and rate requests stored

in the second queue. Since Montpetit does not disclose the claimed first, second, third and fourth queues, Montpetit cannot disclose or suggest that that volume requests stored in the third and fourth queues are preempted for at least one frame by allocation of timeslots to rate requests stored in the first queue and rate requests stored in the second queue.

The Office Action states that lower priority queues in Montpetit are preempted in favor of higher priority queues and points to col. 13, lines 49-52 for support (Office Action – page 8). The mere fact that Montpetit may preempt requests in lower priority queues in favor of higher priority queues does not read on or suggest preempting both high and low priority volume requests stored in the third and fourth queues for allocation of time slots to rate requests stored in the first and second queues, where the first and second queues store high and low priority rate requests, respectively, as required by amended claim 11.

For at least these reasons, Montpetit does not disclose or suggest each of the features of claim 11. Accordingly, withdrawal of the rejection and allowance of claim 11 are respectfully requested.

Claims 13-15 depend on claim 11 and are believed to be allowable for at least the reasons claim 11 is allowable. Accordingly, withdrawal of the rejection and allowance of claims 13-15 are respectfully requested.

Claims 17-19, 21-31, 33-40 and 42-50 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Montpetit in view of Natarajan (U.S. Patent No. 5,699,355). The rejection is respectfully traversed.

Claim 17 recites a method for performing bandwidth allocations. Claim 17 recites selectively sending an allocation command identifying the allocated transmission slots to the terminal based upon the distributing, where the allocation command includes a slot numbering identifier identifying one of a plurality of slot numbering patterns. Claim 17, as amended, also recites that the terminal determines actual transmission slots to use based on a number of allocated transmission slots and the slot numbering identifier and wherein the number of allocated transmission slots and the slot numbering identifier do not identify the actual transmission slots to be used by the terminal.

The Office Action admits that Montpetit does not disclose selectively sending an allocation command that includes a slot number identifier that identifies one of a plurality of slot number patterns (Office Action – page 10). The Office Action, however, states that Natarajan discloses a slot number identifier identifying one of a plurality of slot numbering patterns and points to col. 5, lines 39-48 for support (Office Action – page 10). The applicant respectfully disagrees.

Natarajan at col. 5, lines 39-48 discloses that time slots may be assigned to a subscriber unit in a contiguous or non-contiguous manner. Assigning slots by a satellite in either a contiguous or non-contiguous manner is not equivalent to sending an allocation command that includes a slot number identifier that identifies one of a plurality of slot number patterns, as recited in claim 17. In other words, transmitting particular slot identifiers is not equivalent to transmitting a slot number identifier that identifies a slot numbering pattern, as required by claim 17.

In addition, even if, for the sake of argument, the actual slot numbers transmitted to a subscriber unit in Natarajan could reasonably be construed to be equivalent to a slot numbering identifier identifying one of a plurality of slot numbering patterns, Natarajan does not disclose or suggest that the terminal determines actual transmission slots to use based on a number of allocated transmission slots and the slot numbering identifier and that the number of allocated transmission slots and the slot numbering identifier do not identify the actual transmission slots to be used by the terminal, as recited in amended claim 17. In other words, Natarajan discloses transmitting the actual time slots that will be used by the subscriber units. In contrast, claim 17, as amended, recites that the information transmitted to the terminal does not identify actual transmission slots to be used by the terminal, but that the terminal uses the information to determine the actual transmission slots.

Therefore, the combination of Montpetit and Natarajan does not disclose or suggest each of the features of claim 17. Accordingly, withdrawal of the rejection and allowance of claim 17 are respectfully requested.

Claims 29 and 38, as amended, recite features similar to the features discussed above with respect to claim 17. For reasons similar to those discussed above with respect to claim 17, withdrawal of the rejection and allowance of claims 29 and 38 are respectfully requested.

Claims 18, 19, 21-28, 30, 31, 33-37, 39, 40 and 42-50 variously depend on claims 17, 29 and 38 and are believed to be allowable for at least the reasons claims 17, 29 and 38 are allowable. In addition, these claims recite additional features not disclosed or suggested by the combination of Montpetit and Natarajan.

For example, claim 19 recites receiving a follow-up request from the terminal, the follow-up request being associated with the volume request and specifying additional desired transmission slots and selectively discarding the follow-up request based upon traffic load. Claims 31 and 40 recite similar features. The Office Action states that Montpetit discloses receiving bandwidth requests for an additional data packet and points to col. 8, lines 48-52, col. 9, lines 53-67 and Fig. 5 for support. The Office Action also states that BAP 85 inherently discards the request after a predetermined time period expires and points to col. 16, lines 29-45 and col. 8, lines 42-48 for support (Office Action – page 11). The applicant respectfully disagrees.

Montpetit discloses that if a predetermined time period expires and the request has not been satisfied, the BAP may drop the request (Montpetit – col. 16, lines 39-45). This, however, is not equivalent to selectively discarding the follow-up request based upon traffic load, as recited in claim 19. In other words, Montpetit merely discloses dropping a follow-up request based on the expiration of a timer. Such a disclosure cannot be fairly construed to disclose selectively discarding a follow-up request based upon traffic load.

For at least these additional reasons, withdrawal of the rejection and allowance of claims 19, 31 and 40 are respectfully requested.

CONCLUSION

In view of the foregoing amendments and remarks, the applicant respectfully requests withdrawal of the outstanding rejections and the timely allowance of this application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 50-0383 and please credit any excess fees to such deposit account.

Respectfully submitted,

By: _____ 4-13-2004
Craig L. Plastrik
Reg. No. 41,254

Customer No. 20991
THE DIRECTV GROUP, INC.
RE/R11/A109
P.O. Box 956
El Segundo, CA 90245-0956
(301) 601-7252